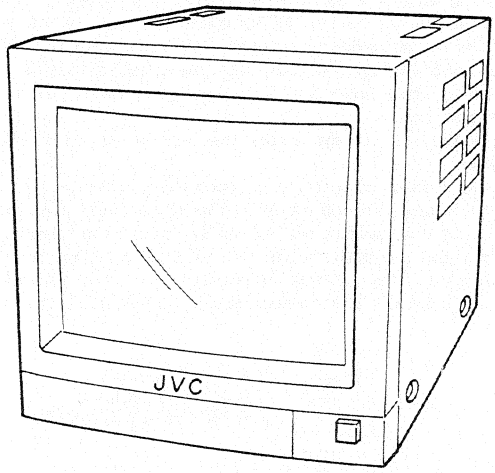
JVC

SERVICE MANUAL

10″ COLOUR VIDEO MONITOR

MODEL **TM–10E(CV)**



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* With SCHEMATIC DIAGRAM

SPECIFICATIONS

Dimensions	22.3 cm(W) x 34.3 cm(D) x 22.7 cm(H)
Weight	9.7 kg
Color System	PAL
Scanning	625 Lines, 50 Hz
Video Input	1 Vp-p, 75 Ω Video input terminal is bridge connected with video output terminal.
Power Input	220 V/240 V AC, 50 Hz
Power Consumption	48 W
Picture Tube	10″, In-Line Type
Viewable Picture Size	17.3 cm(W) x 13.6 cm(H)
High Voltage	21 kV ±1 kV (at zero beam current)
IC	3
Transistors	13
Tube	1

(Design and specifications subject to change without notice)

No. 50341
Dec. 1989

SAFETY PRECAUTION

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual many create shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, the NEUTRAL (⏚) side GND and EARTH (⏚) side GND.
   Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B_1 setting should be checked or adjusted.
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approvided by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
9. **Isolation Check**
   (Safety for Electrical Shock Hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3,000V AC (r.m.s.) for a period of one second.
(. . . . . Withstand a voltage of 1,100V AC (r.m.s.) to an appliance rated up to 120V, and 3,000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

- **Alternate Check Method**
  Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
  Measure the AC voltage across the resistor with the AC voltmeter.
  Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

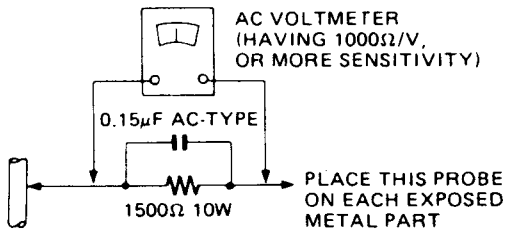


Fig. A

FEATURES

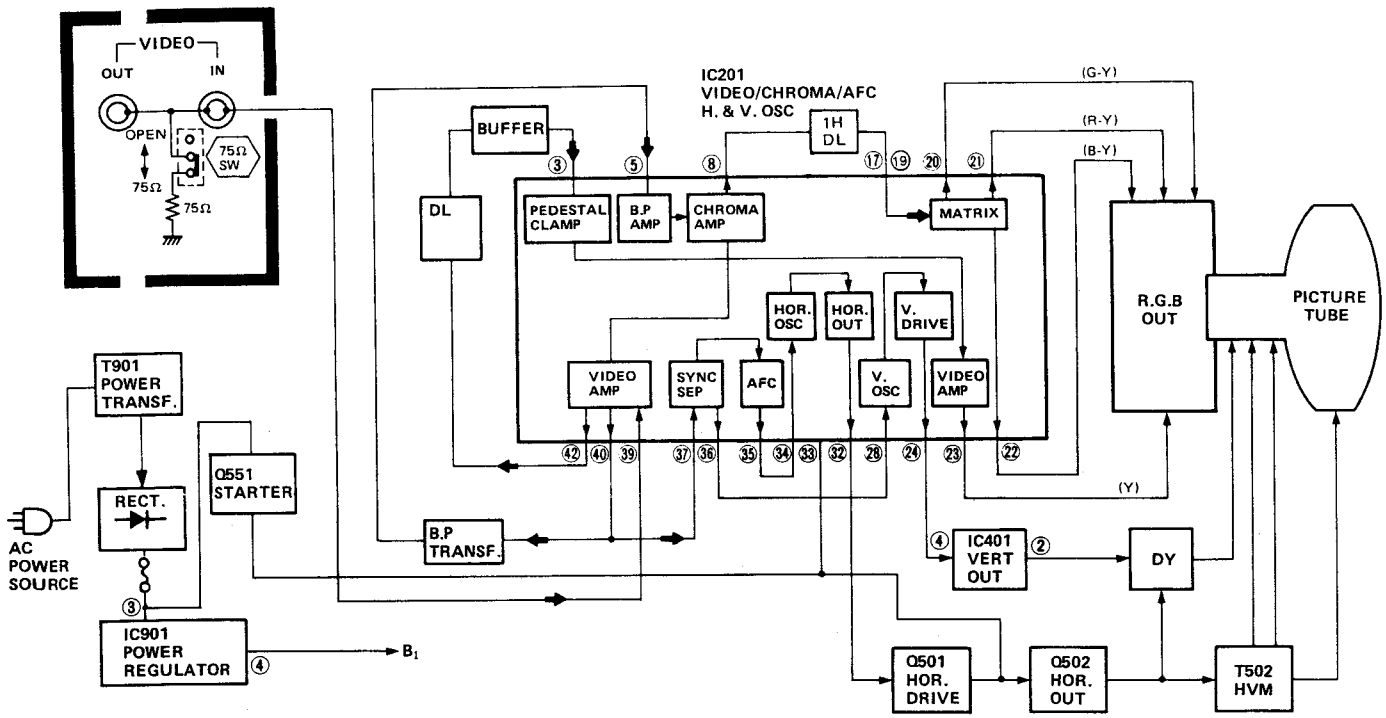
- **Adopts a simple and new-type chassis.**
- **Adopts IC's into which video, sync., chroma circuits are one-pack incorporated.**
- **Adopts three terminals power supply cord.**

- **With VIDEO INPUT/OUTPUT (Bridge termination) terminals.**
  This terminal causes the video signals that enter the VIDEO INPUT to be output as such to the bridge without passing through the circuits within this unit. Therefore, when this terminal is used to connect the unit to another VTR or a MONITOR, set the 75 Ω switch in step to the OPEN position.

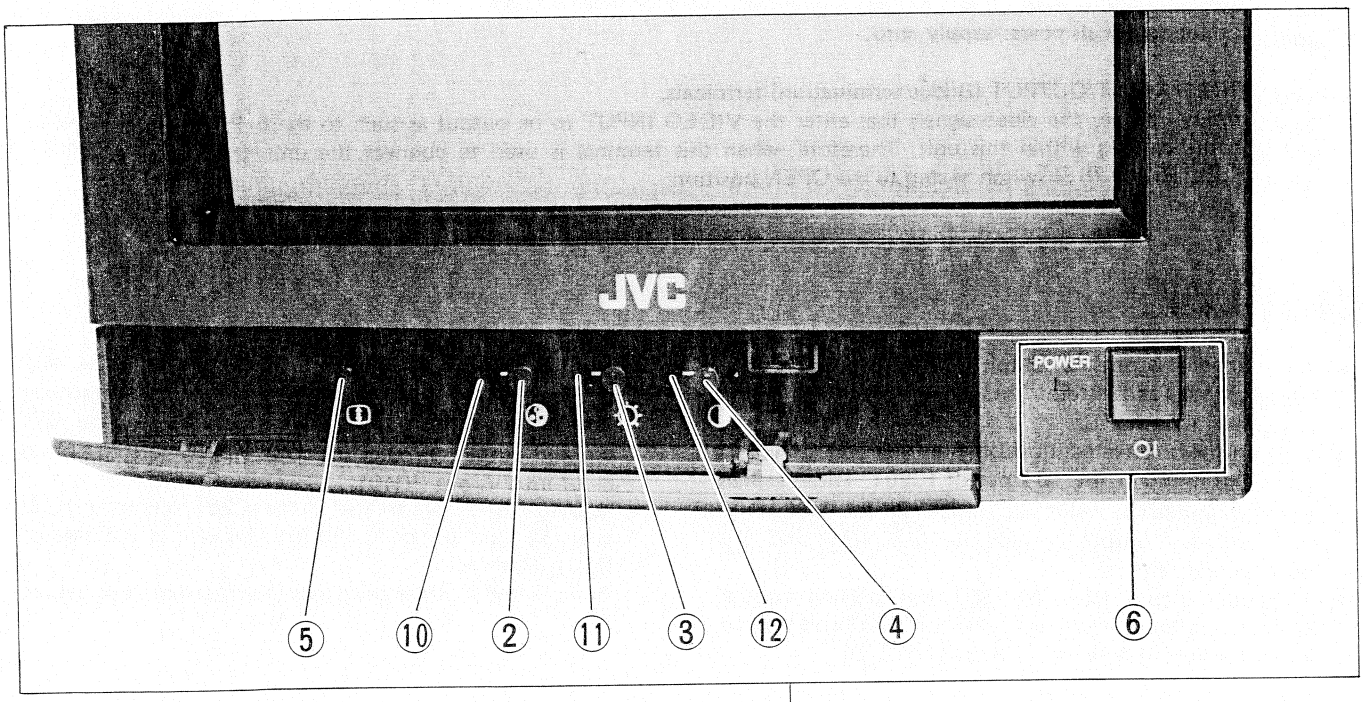
OUTLINE

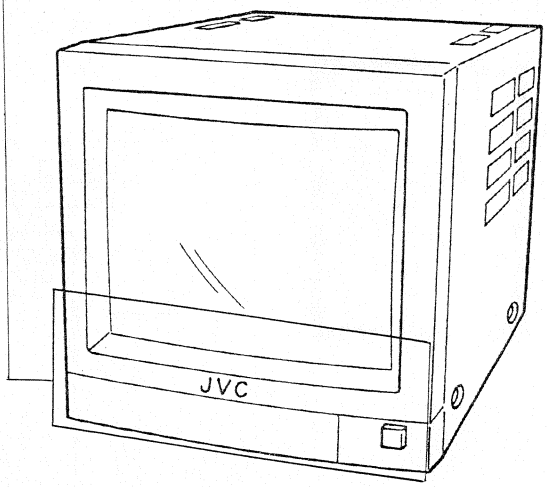
- This model adopts a simple and new-type chassis. Video, sync., and chroma circuits are incorporated into one-pack 42 pin IC.
- Video signals detected through the (40) pin of IC201 are input through the (5) pin of IC201. Those signals are distributed to color difference signals: G-Y, R-Y, B-Y, and then output through the (20), (21) and (22) pins respectively.
- Y signals output from the (42) pin, passing through DL201, are input into the (3) pin of IC201 and treated, and then output from the (23) pin of IC201.
- On the other hand, video signals output from the (40) pin are input through the (37) pin and output through the (36) pin (V. sync. signal), input through the (28) pin and output through the (24) pin (V. out), and then input into V. out (IC401).
- H. sync. signals are treated in the IC201, output through the (32) pin (H. out), and then input into the base of Q501 (H. drive).
  Refer to the summarized Block Diagram described below.

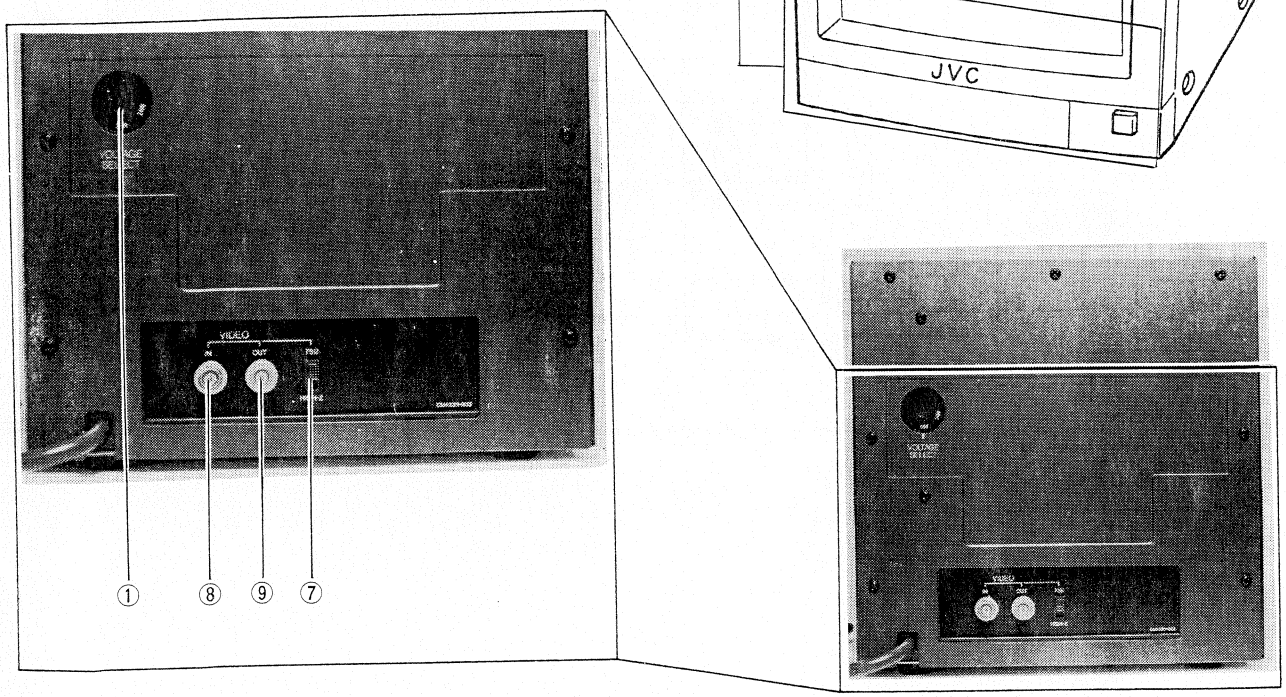
(Block Diagram)



FUNCTIONS







① **VOLTAGE SELECTOR**
② **COLOR CONTROL**
③ **BRIGHT CONTROL**
④ **CONTRAST CONTROL**

⑤ **V. HOLD CONTROL**
When the picture rolls up or down, turn the V. HOLD control clockwise or counterclockwise for best picture.

⑥ **POWER SWITCH/POWER INDICATOR**
Press power switch to the ON position; the power indicator will light and the monitor will be switched ON.
Press again to switch off; the indicator will go out.

⑦ **75 Ω SWITCH**
This switch is set to "75 Ω" or "OPEN" depending on how the VIDEO INPUT/OUTPUT TERMINALS are used. When only the VIDEO INPUT TERMINAL is used, the switch is set to the 75 Ω side, while when both VIDEO OUTPUT and VIDEO INPUT are simultaneously used, setting is made to the "OPEN" side. Refer to the section on "BRIDGE CONNECTION" for further details.

⑧ **VIDEO INPUT TERMINAL**
When this terminal is used together with VIDEO OUTPUT, set the 75 Ω switch in step to "OPEN". When VIDEO OUTPUT is not used, set this 75 Ω switch to the 75 Ω side. Refer to the subsequent section on "BRIDGE CONNECTION".

⑨ **VIDEO OUTPUT TERMINAL**
This terminal causes the VIDEO SIGNALS that enter the VIDEO INPUT to be output as such to the bridge without passing through the circuits within this unit. Therefore, when this terminal is used to connect the unit to another VTR or a monitor, set the 75 Ω switch in step to the OPEN position.

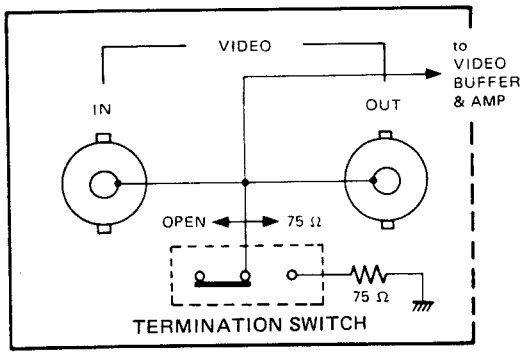
⑩ **SUB-COLOR VR**

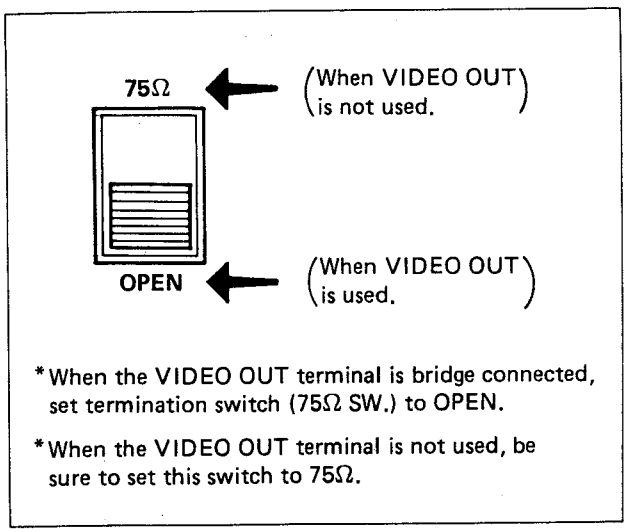
⑪ **SUB-BRIGHT VR**

⑫ **SUB-CONTRAST VR**

■ BRIDGE CONNECTION

- Internal wiring is shown in the diagram.





*When the VIDEO OUT terminal is bridge connected, set termination switch (75Ω SW.) to OPEN.

*When the VIDEO OUT terminal is not used, be sure to set this switch to 75Ω.

HOW TO REMOVE FOR SERVICE

■ REAR PANEL REMOVAL

Unscrew the nine screws Ⓐ shown in Fig. A.

■ TOP PANEL REMOVAL

After removing the rear panel, unscrew the four screws Ⓐ shown in Fig. B & Fig. C.

■ MAIN P.C. BOARD REMOVAL

1. Unscrew the three screws Ⓐ shown in Fig. D.
2. Then remove the anode wire, speaker connector and other connector or wires (if necessary).
3. Withdraw the Main P.C. board backward along the rail.

* When conducting a check with power supplied be sure to confirm that the CRT earth wire is connected to the CRT socket board and Main P.C. board.

■ FRONT PANEL REMOVAL

Unscrew the four screws Ⓐ shown in Fig. E, enable the front panel to be removed.

■ PICTURE TUBE REMOVAL

Remove the four nuts Ⓐ shown in Fig. F, enables the CRT to be removed.

■ WIRE CLAMPING AND TYING BAND

1. Be sure to clamp the wire.
2. Never remove the tying band used for wire clamping. Should it be removed, be sure to reclamp the wire in its original position.
   (Be sure to use insulating material.)

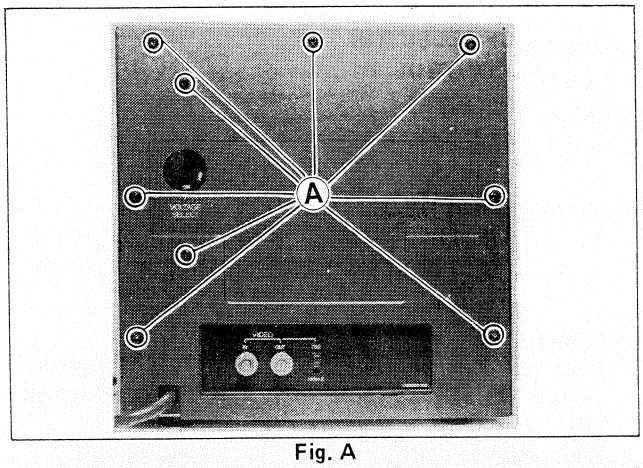


Fig. A

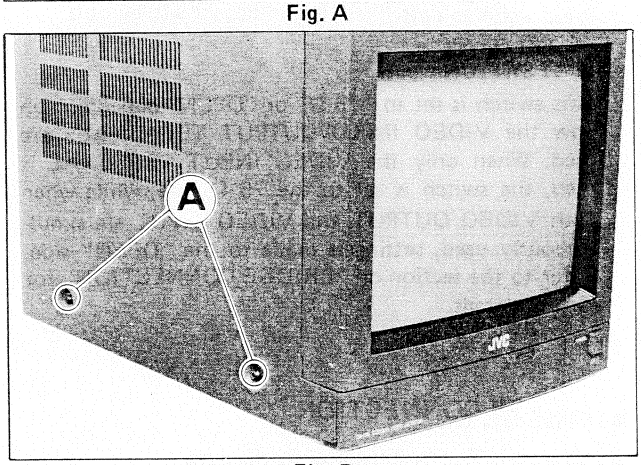


Fig. B

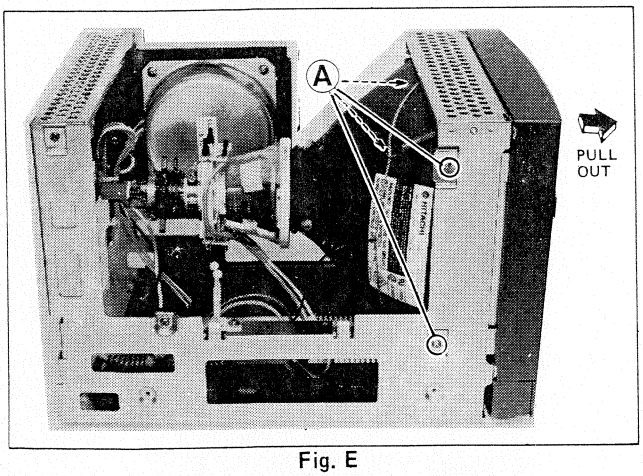


Fig. E

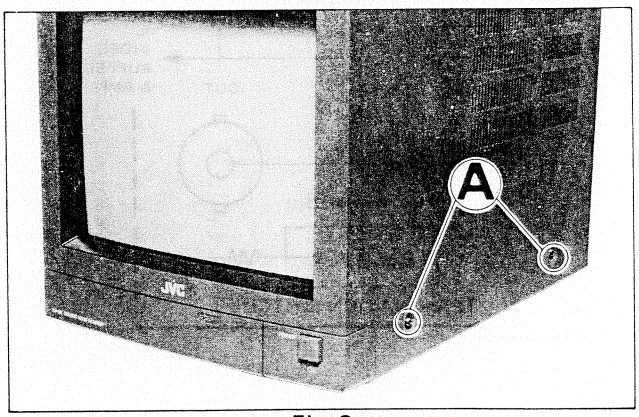


Fig. C

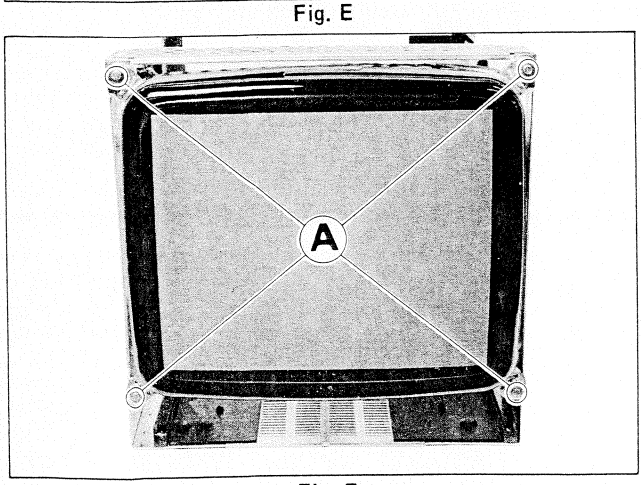


Fig. F

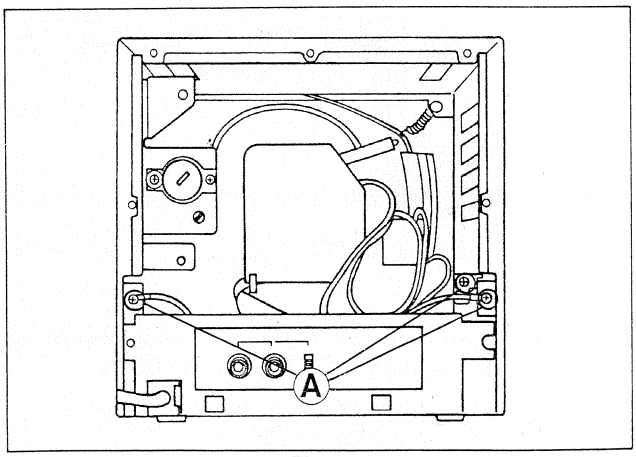


Fig. D

SERVICE ADJUSTMENTS

PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergency magnets assembly has been set at the factory and requires no field adjustments.
However, should the assembly be accidentally jarred or tampered with, some or all adjustments may be necessary.

COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining clamp (Fig. A). With a sharp knife cut between the picture tube and the bond. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergence magnet assembly in place (Fig. A). The paint must be removed with the end of a screwdriver before any adjustments are attempted.

1. Display a monochrome pattern.
2. Let the purity tabs come in line horizontally as is shown in Fig. C. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the green cut-off control to maximum and the red and blue cut-off controls to minimum. Then adjust the screen control so that the green band can be seen best. (Fig. B, D)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. Unless correct, bring it to the center by rotating the two tabs, kept at an angle, together in either direction. (Fig. E, F)
7. Repeat steps 5 and 6 alternately until the green band and the vertical centre come to the centre.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning red or blue cut-off control to maximum and green cut-off control to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining clamp (do not install wedges at this time).

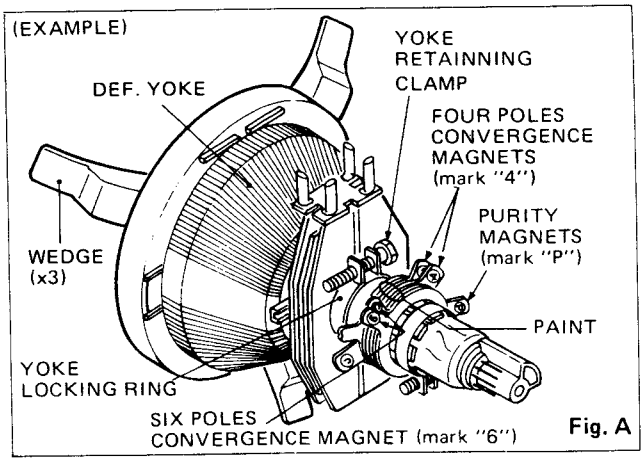


Fig. A

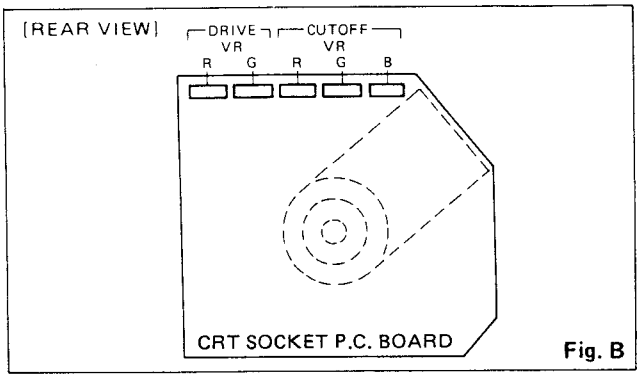


Fig. B

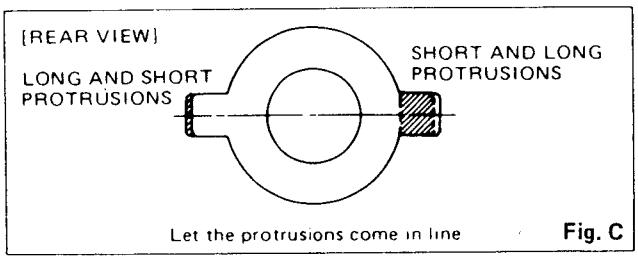


Fig. C

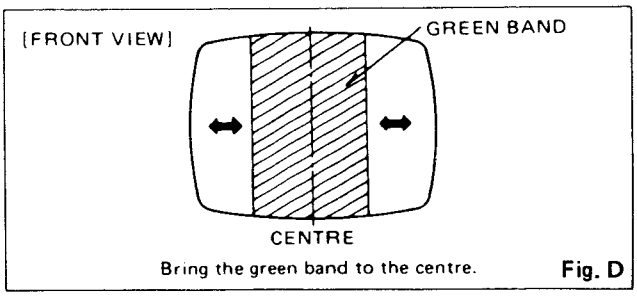
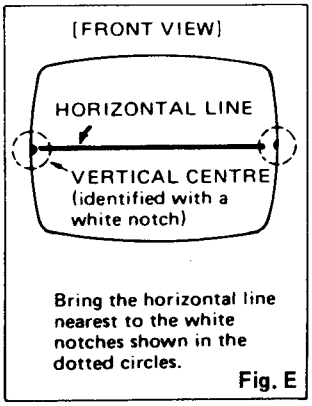


Fig. D


[FRONT VIEW]
HORIZONTAL LINE
VERTICAL CENTRE (identified with a white notch)
Bring the horizontal line nearest to the white notches shown in the dotted circles.
Fig. E

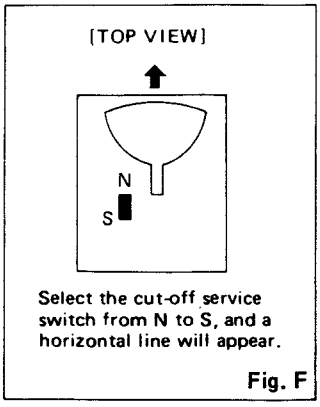


Fig. F

STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Display a crosshatch pattern, and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. I)
3. Rotate the front pair of tabs as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs. (Fig. G)
4. Rotate the rear pair of tabs as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. H)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix 6 magnets.
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. J, K)
9. Insert three wedges to the position as shown in Fig. L to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape. Therefore, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

WHITE BALANCE ADJUSTMENT (Black and White Tracking)

1. Display a monochrome pattern.
2. Set the red and green drive controls for their mechanical center. (Fig. B)
3. Turn the red, green and blue cut off controls and the screen control fully counterclockwise.
4. Select a service switch as shown in Fig. F.
5. Turn screen control slowly clockwise until a very faint horizontal line appears.
6. Turn the cut off control of the color which has appeared first, clockwise by about 10° and then adjust the screen control again so that the color may shine faintly.
7. Turn the other color cut off controls slowly clockwise until a reasonable white line appears.
8. Return a service switch to normal position. (Fig. F)
9. Adjust the red and green drive controls for best white highlights.

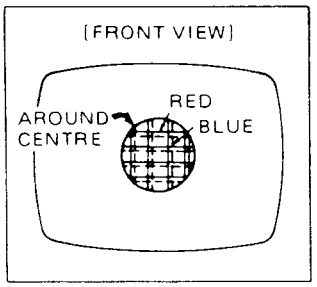


Fig. G

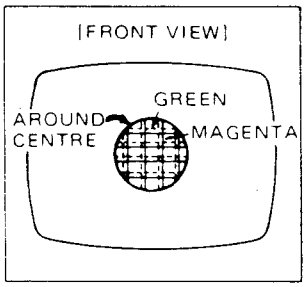


Fig. H

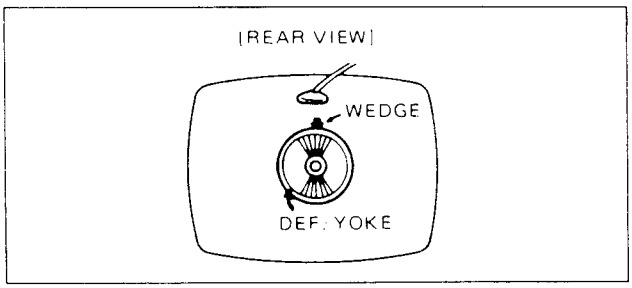


Fig. I

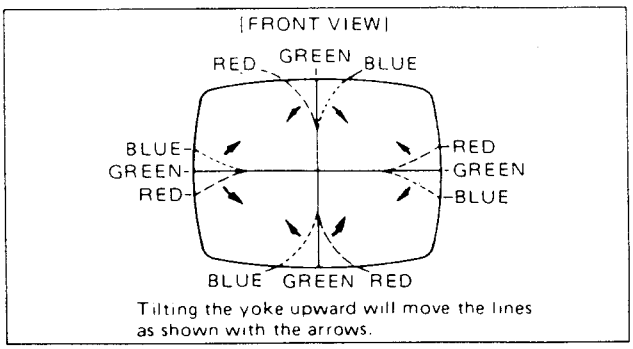


Fig. J

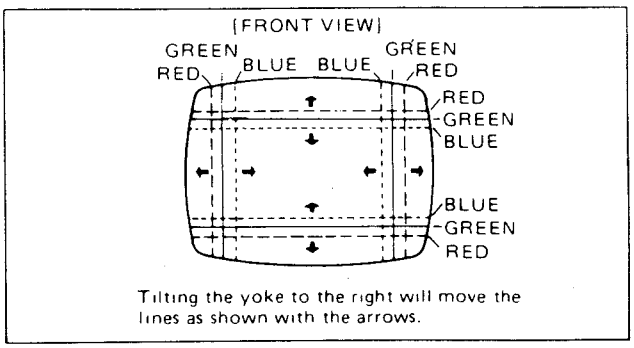


Fig. K

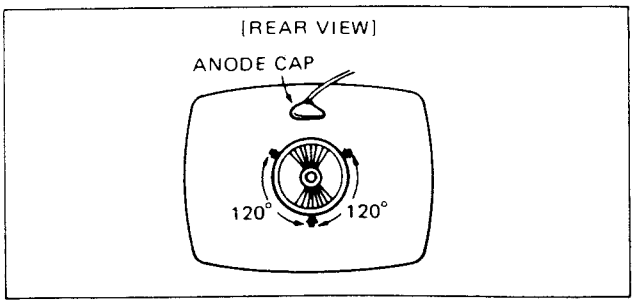


Fig. L

* For alignment locations of adjusting parts, test point and others, refer to the schematic diagram.

■ B_1 VOLTAGE

Confirm that B_1 voltage exists between TP-91 and TP-E. (DC 115V)

■ FOCUS

Adjust the FOCUS control for best overall difinition and picture detail at normal brightness and contrast.

■ HORIZONTAL OSCILLATOR

1. Set the H. FREQ. VR to the mechanical center position.
2. Connect the jumper clip between TP-33 and earth (⏚).
3. While rotating the H. FREQ. control keep the picture stationary or slowly moving.
4. Remove the jumper clip.
5. Make sure that the set maintains horizontal sync, when channels are switched.

■ HORIZONTAL WIDTH

Adjust H. WIDTH control coil by turning it with a hexagonal adjusting bar only if RIGHT and LEFT sides of pictures can't be seen.

■ SUB CONTRAST AND SUB BRIGHT

1. Display a color signal.
2. Set the CONTRAST and BRIGHT knob to the central position respectively.
3. Adjust the SUB CONTRAST VR and SUB BRIGHT VR to obtain an ideal picture.

■ VERTICAL CENTER

Centering is completed at the factory, although it may become distorted when CRT is changed.
In such case, adjusting the V. CENTER SW. moves the picture up or down.

■ VERTICAL HEIGHT

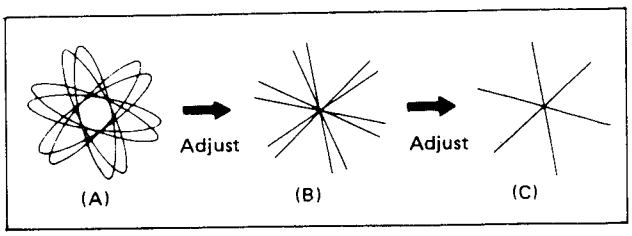
1. Display a crosshatch or a pattern with which symmetry can be checked.
2. Adjust the V. height VR to obtain the optimum size of vertical size.

■ SUB COLOR

1. Display a color signal.
2. Set the COLOR knobs to the central position respectively.
3. Adjust the SUB COLOR VR to obtain the most natural color.

■ COLOR SYNC

1. Display a color bar signal.
2. Set the oscilloscope at the X-Y mode and connect channel 1 (X axis) to TP-49 and channel 2 (Y axis) to TP-48 respectively.
3. Next, connect Q205 collector to TP-40 by way of 10 kΩ resistor. Further, make connection between TP-43A and TP-43B. For each connection, use jumper clips.
4. Adjust DL AMP. VR so that the figure becomes (B) from (A).
5. Adjust DL P. TRANSF. (T303) so that the figure becomes (C) from (B).
6. While rotating a trimmer condenser (C310) using a non-metallic screwdriver, adjust it until the horizontal striped patterns with color become stationary or are slowly moving.
7. Remove the short jumper and 10 kΩ resistor.
8. Confirm that color sync. is not disrupted when channels are switched.



REPLACEMENT PARTS LIST

■ PARTS LIST INFORMATION

*** UTILIZE THE INFORMATION ON THIS PAGE IN COMBINATION WITH THE REPLACEMENT PARTS LIST. WHEN ORDERING REPLACEMENT PARTS PLEASE SPECIFY THE PART NUMBER AS SHOWN IN THIS LIST INCLUDING PART NAME, AND MODEL NUMBER. COMPLETE INFORMATION WILL HELP EXPEDITE THE ORDER.**

PRODUCT SAFETY NOTE
Components identified by the ⚠ symbol in the PARTS LIST and the shaded areas on the Schematic have special characteristics important to safety. Before replacing any of these components read carefully the SAFETY PRECAUTION on Page 2 of this Service Manual. DO NOT degrade the safety of the set through improper servicing.

1. ABBREVIATED WORD OF RESISTORS AND CAPACITORS

RESISTOR

C R	:	Carbon Resistor
Comp. R	:	Composition Resistor
OM R	:	Oxide Metal Film Resistor
V R	:	Variable Resistor
MF R	:	Metal Film Resistor
CMF R	:	Coating Metal Film Resistor
UNF R	:	Unflammable Resistor
F R	:	Fusible Resistor

CAPACITOR

C Cap.	:	Ceramic Capacitor
M Cap.	:	Mylar Capacitor
E Cap.	:	Electrolytic Capacitor
BP E Cap.	:	Bi-Polar (or Non-Polar) Electrolytic Capacitor
MM Cap.	:	Metalized Mylar Capacitor
PP Cap.	:	Polypropylene Capacitor
MPP Cap.	:	Metalized PP Capacitor
PS Cap.	:	Polystyrol Capacitor
Tan. Cap.	:	Tantal Capacitor

2. FOLLOWING RESISTORS AND CAPACITORS OF STANDARD ELECTRICAL COMPONENTS ARE OMITTED FROM THIS PARTS LIST. EACH PART NUMBER OF THESE STANDARD REPLACEMENT COMPONENTS IS DEFINED AS FOLLOWS.

Carbon Resistor (C R): Lead form (—⊃⊂—)

Rating	Part No.
¼W	QRD141J-□□□ (CR; ¼W; Tolerance; Lead form; Constant term)
½W	QRD121J-□□□

Composition Resistor (Comp. R): Lead form (—⊃⊂—)

Rating	Part No.
½W	QRC121K-□□□ (Comp. R; ½W; Tolerance; Lead form; Constant term)

Mylar Capacitor (M Cap.): Lead form (⌒)

Withstand Voltage	Part No.
50V	QFM41HK-□□□ (M Cap.; Lead form; 50V; Tolerance; Constant term)
100V	QFM42AK-□□□
200V	QFM42DM-□□□

Ceramic Capacitor (C Cap.): Lead form (⌒)

Withstand Voltage	Parts No.
25V	QCS11EJ-□□□ (C Cap.; Lead form; 25V; Tolerance; Constant term)
50V	QCS11HP-□□□
500V	QCS12HP-□□□

Electrolytic Capacitor (E Cap.): Lead form (⌒)

Withstand Voltage	Parts No.
6.3V	QET40JR-□□□ (E Cap.; Lead form; 6.3V; Tolerance; Constant term)
10V	QET41AR-□□□
16V	QET41CR-□□□
25V	QET41ER-□□□
50V	QET41HR-□□□
63V	QET41JR-□□□
100V	QET42AR-□□□
160V	QET42CR-□□□
250V	QET42ER-□□□

3. DECODING OF TOLERANCE AND CONSTANT TERM

TOLERANCE

J: ±5% K: ±10% M: ±20% N: ±30% H: $^{+50}_{-10}$%
Z: $^{+80}_{-20}$% P: $^{+100}_{-0}$% R: $^{+30}_{-10}$% F: ±1%

CONSTANT TERM

• Carbon Resistor (¼W, ±5% Tolerance)

QRD141J-□□□ (CONSTANT TERM.)

- □□□ (↑↑↑)
  - 1R0 → 1.0Ω
  - 9R7 → 9.7Ω
  - 2.7Ω → QRD141J-2R7
  - 47kΩ → 47 x 10³ → QRD141J-473
- 10□ → 10□ means 10 x 10□ (Ω)
- 82□ → 82□ means 82 x 10□ (Ω)

• Ceramic Capacitor (50 Volts, ±5% Tolerance)

QCS11HJ-□□□ (CONSTANT TERM.)

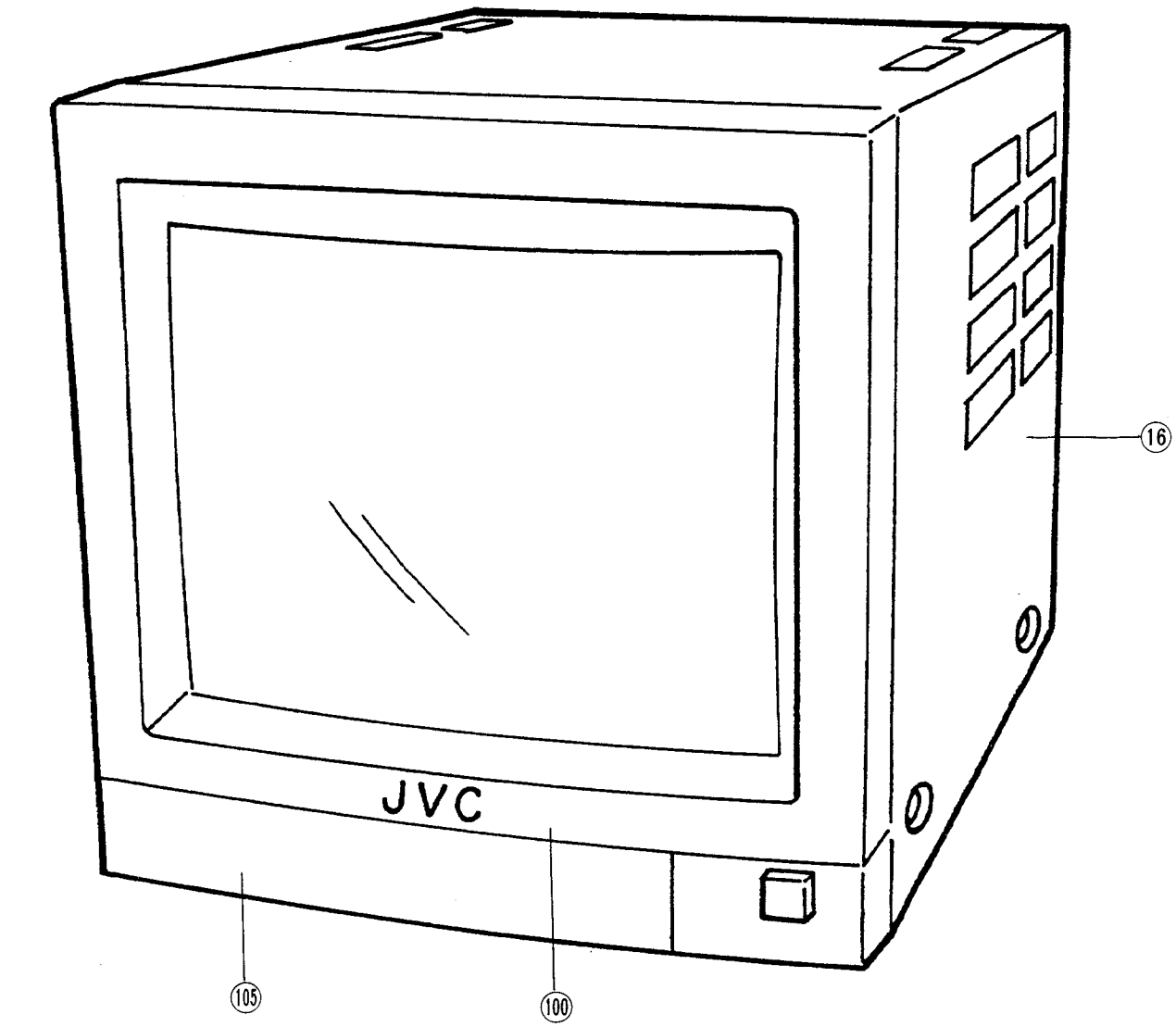
- □□□ (↑↑↑)
  - 1R0 → 1.0pF
  - 8R0 → 8.0pF
  - 5pF → QCS11HJ-5R0
  - 680pF → 68 x 10¹ → QCS11HJ-681
  - 3300pF → 33 x 10² → QCS11HJ-332
- 10□ → 10□ means 10 x 10□ (pF)
- 88□ → 88□ means 88 x 10□ (pF)

■ MAIN REPALCEMENT PARTS LIST

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
CRT & TUNER				
		CE40266-00A	PC MAGNET	
		CE40666-00A	WEDGE	X3
	⚠	CJ26494-00C	DEFLECTION YOKE	DY01
	⚠	CJ39634-00J	DEGAUSSING COIL	L01
	⚠	A22JCM00X-AQ	PICTURE TUBE	V01
VARIABLE R				
R101		QVAZ001-C008A	V R UNIT	
R1333		QVPC608-102M	V R (DL AMP)	1KΩ B
R1417		QVPC608-103M	V R (V. HEIGHT)	10KΩ B
R1514		QVPC608-103M	V R (H. FREQ)	10KΩ B
R3703		QVPE802-103H	V R (B CUT OFF)	10KΩ B
R3708		QVPE802-103H	V R (R CUT OFF)	10KΩ B
R3709		QVPE802-201H	V R (R DRIVE)	200 Ω B
R3713		QVPE802-103H	V R (G CUT OFF)	10KΩ B
R3714		QVPE802-201H	V R (G DRIVE)	200 Ω B
TRANSFORMER				
T1501	⚠	CE40361-00B	HOR. DRIVE TRANSF	
	⚠	CJ26896-00A	H. V. TRANSF.	T1502
	⚠	CE30122-001	POWER TRANS.	T901
DIODE				
D1206		MA4091 (H)	ZENER DIODE	
D1403	⚠	V19E	SI. DIODE	
D1503	⚠	HZ7B2L-C1	ZENER DIODE	
D1504	⚠	V19E	SI. DIODE	
D1507		RH1S-LFA1	SI. DIODE	
D1510		V19E	SI. DIODE	
D1551		1SS81	SI. DIODE	
D1552		MA4120 (L) -T2	ZENER DIODE	
D1554		SLR-34VC3F	L. E. D	Power Ind.
TRANSISTOR				
Q1502	⚠	2SD1554-LB	SI. TRANSISTOR	H. Out
Q3701	⚠	2SC2611	SI. TRANSISTOR	
Q3702	⚠	2SC2611	SI. TRANSISTOR	
Q3703	⚠	2SC2611	SI. TRANSISTOR	
IC				
IC1201		TA7698AP	I. C. (M)	
IC1401	⚠	AN5515	I. C. (M)	
IC1901	⚠	STR30115-A	I. C.	
OTHERS				
		CM31745-A0D-V0	TERMINAL ASSY	
		CM10548-00Y-M0	FRONT PANEL ASSY	
		CM43310-001-V0	POWER KNOB	
DL1201		CE40714-001	DELAY LINE	
DL1301		A76350	1H DELAY LINE	
FR1420	⚠	QRH027J-3R3M	F R	3.3 Ω 2W J
FR1525	⚠	QRH027J-2R7M	F R	2.7 Ω 2W J
FR1532	⚠	QRH017J-1R5M	F R	1.5 Ω 1W J
FR1551	⚠	QRH144J-272H	F R	2.7kΩ 1/4W J
FR1701	⚠	QRH127J-4R7M	F R	4.7 Ω 1/2W J
F1901	⚠	QMF51E2-3R15S	FUSE	3.15A
F1902	⚠	QMF51E2-R80S	FUSE	0.80A
LF1901	⚠	CE41094-00B	LINE FILTER	
S01		QSS1C22-C02	SLIDE SWITCH	75Ω SW
S1201		QSP2C22-C01	PUSH SWITCH	Service SW
S1401		QSL4A13-C02	LEVER SWITCH	V Center SW
S1901	⚠	QSP4D21-C06	PUSH SWITCH	Power SW
	⚠	QSR4A14-C03	ROTARY SWITCH	Voltage Selector
TH1201		A75575-332	THERMISTOR	
TH1901	⚠	CE40478-001	W POSISTOR	
X1301		A76090	CRYSTAL	

■ CHASSIS AND CABINET PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS
⚠ 1	A22JCM00X-AQ	PICTURE TUBE	V01
⚠ 2	CJ26494-00C	DEFLECTION YOKE	DY01
3	CE40266-00A	PC MAGNET	
⚠ 4	CJ26896-00A	H. V. TRANSF.	T1502
⚠ 5	CJ39634-00J	DEGAUSSING COIL	L01
⚠ 6	2SD1554-LB	SI. TRANSISTOR	H. Out
7	QRF208K-331	UNF R	330 Ω 20W K
8	QZF2207-001	FOOT	X4
9	CE40666-00A	WEDGE	X3
10	A48457	SPRING	X2
11	CH30106-00A	BRAIDED ASSY	
12	CM41677-A01	KNOB CAP	
13	CEMB002-00A	BNC CONNECTOR	
⚠ 14	QMP4738-200R	POWER CORD	
15	QSS1C22-C02	SLIDE SWITCH	75Ω SW
16	CM10552-B02	TOP COVER	
17	SBSB3006M	TAP SCREW	X4 Top Cover
18	CM20810-007	REAR PLATE	
19	SBSB3010M	TAP SCREW	X9
20	CM22085-001(R)	ROLL R LABEL	
⚠ 21	QSP4D21-C06	PUSH SWITCH	Power SW
22	QSP2C22-C01	PUSH SWITCH	Service SW
23	QSL4A13-C02	LEVER SWITCH	V Center SW
24	QVAZ001-C008A	VR UNIT	
25	SLR-34VC3F	L. E. D.	Power Ind.
26	A27355-AV0	CORD CLAMP	
⚠ 27	CE30122-001	POWER TRANS.	T901
⚠ 28	QSR4A14-C03	ROTARY SWITCH	Voltage Selector
100	CM10548-00Y-M0	FRONT PANEL ASSY	Include No. 101-105
101	CM43310-001-V0	POWER KNOB	
102	CM30861-030	COIL SPRING	
103	CM31720-004	CONTROL SHEET	
104	CM41861-001	DOOR LATCH	
105	CM31721-021-V0	DOOR	
200	CM31745-A0D-V0	TERMINAL ASSY	Include No. 201
201	CM43311-003	TERMINAL SHEET	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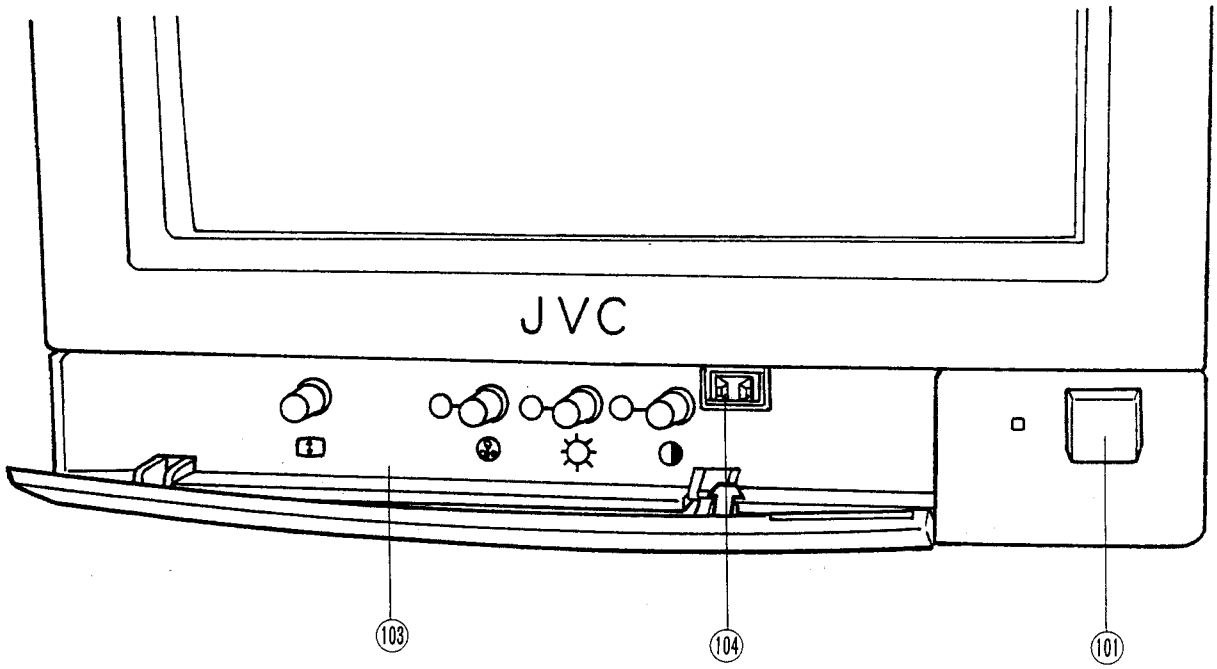
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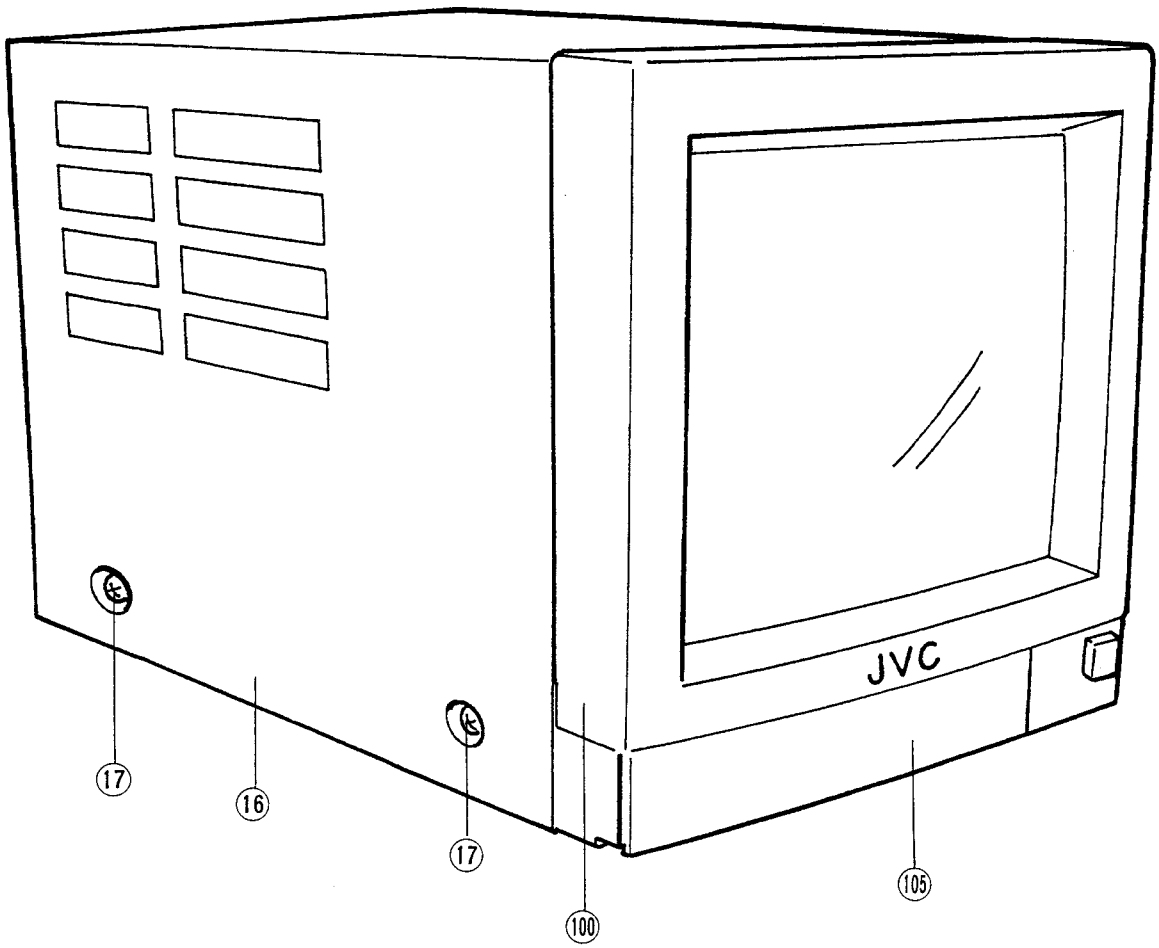
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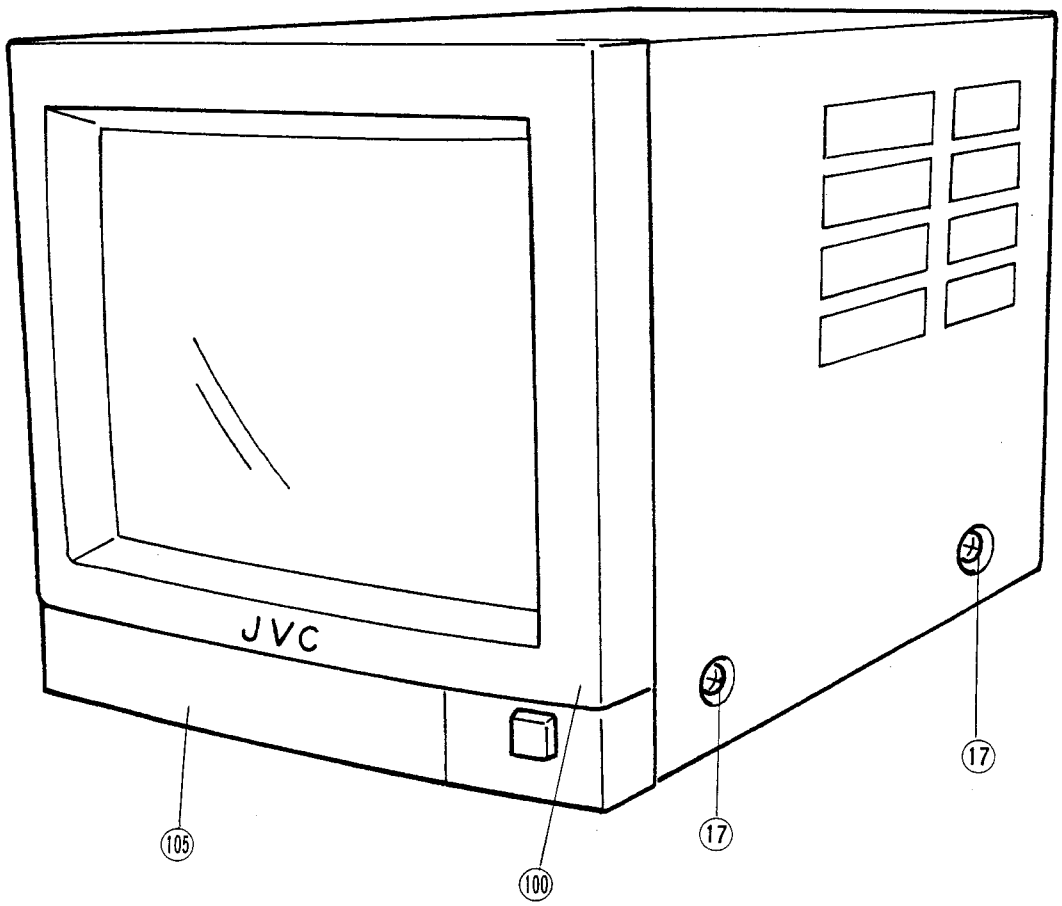
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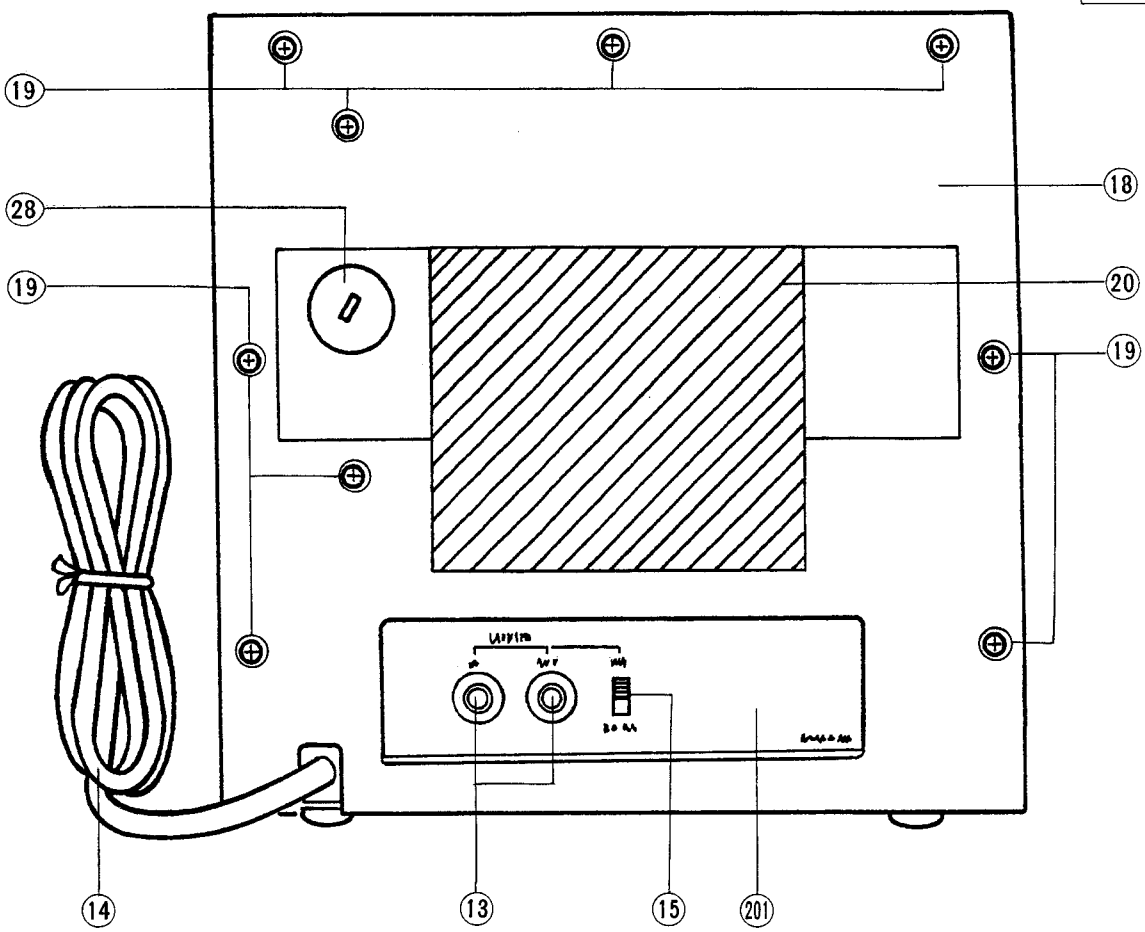
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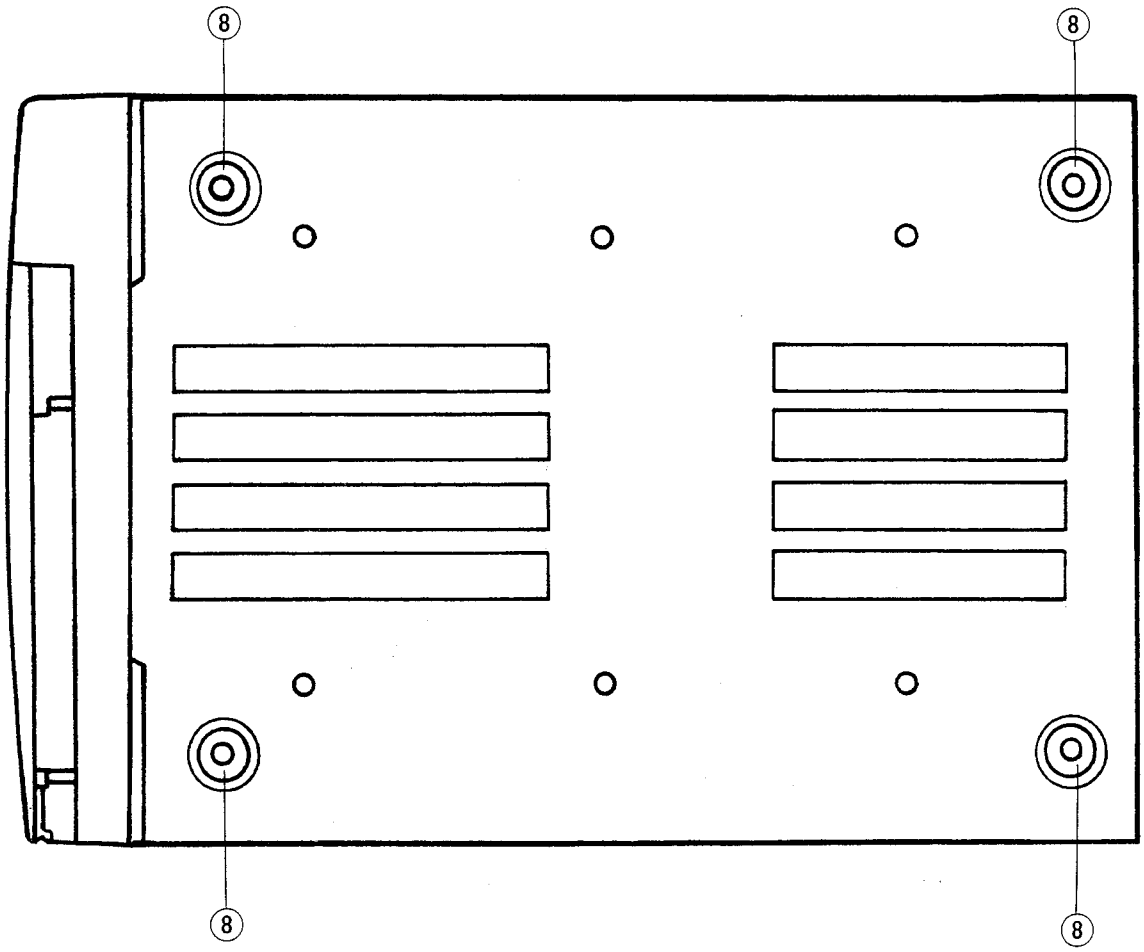
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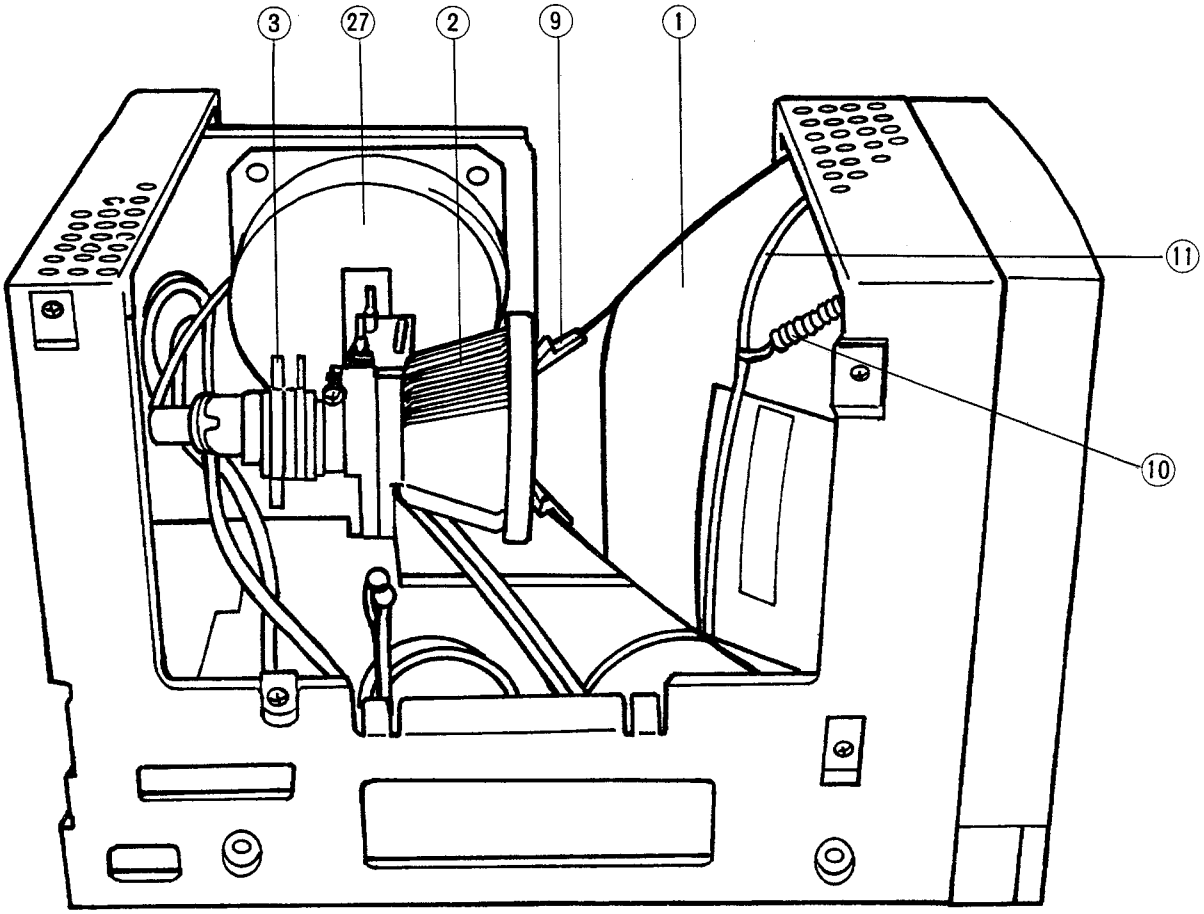
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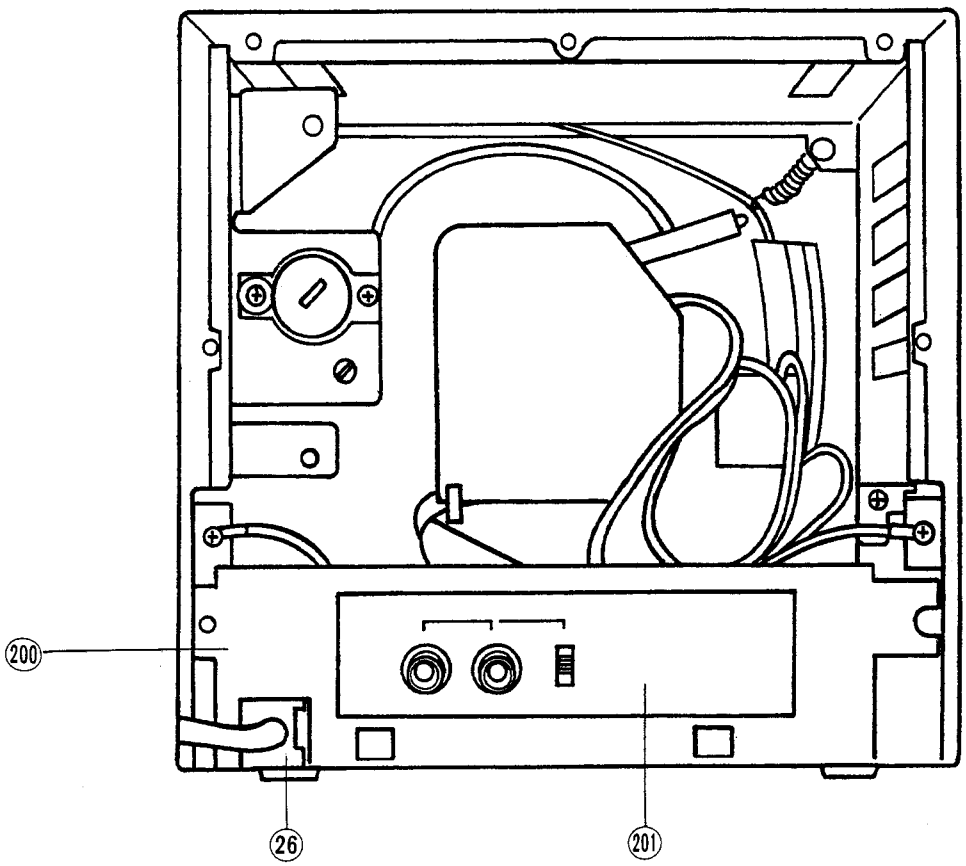
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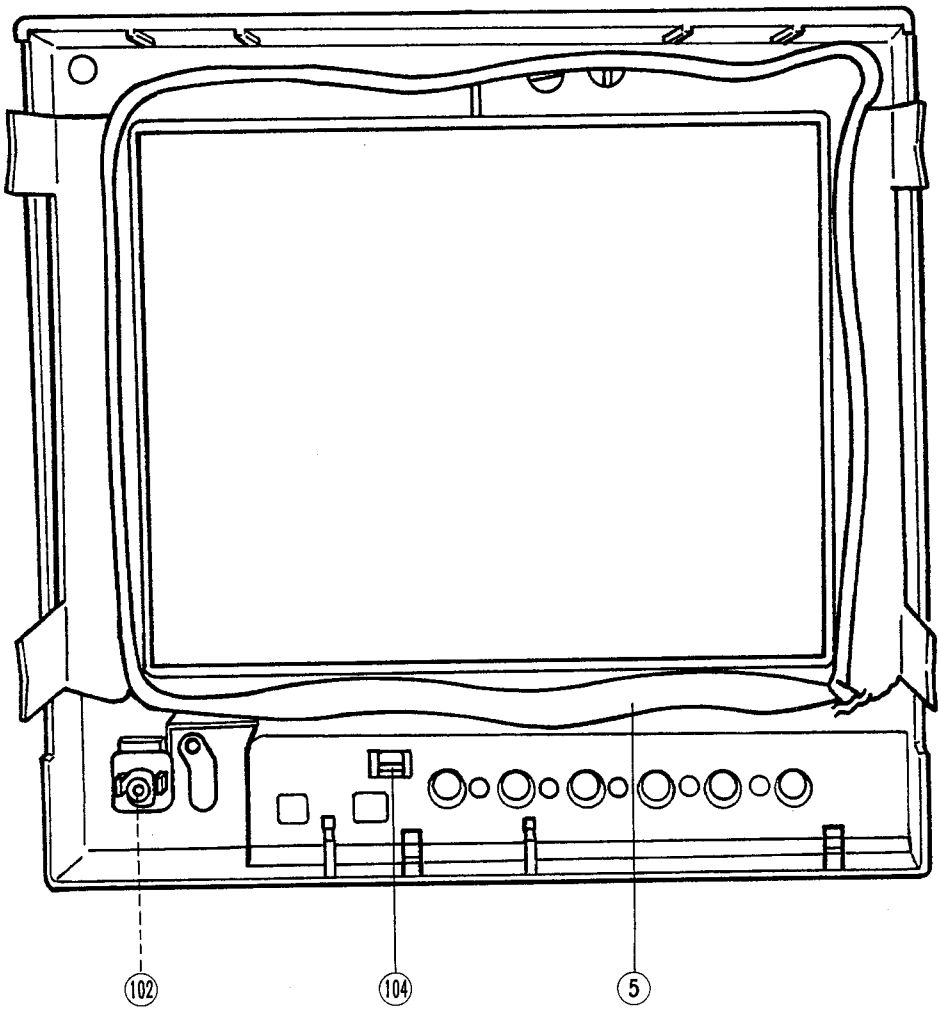
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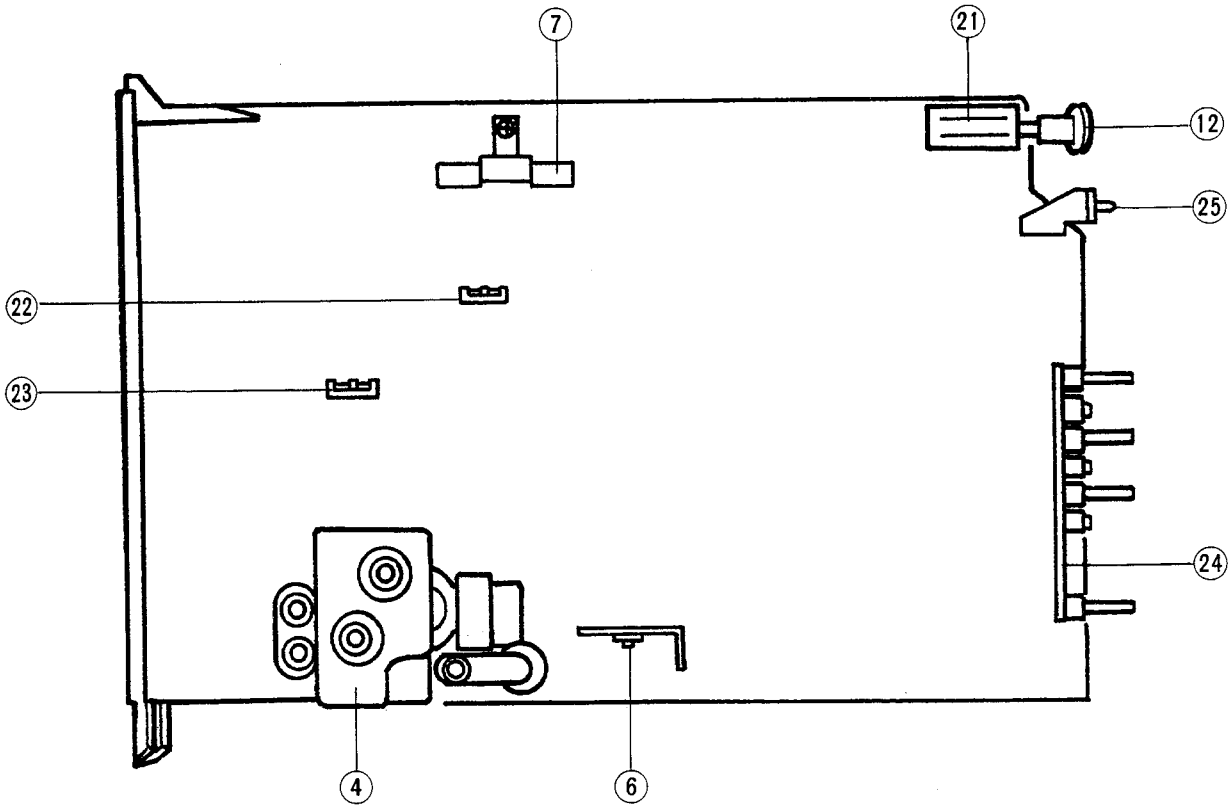
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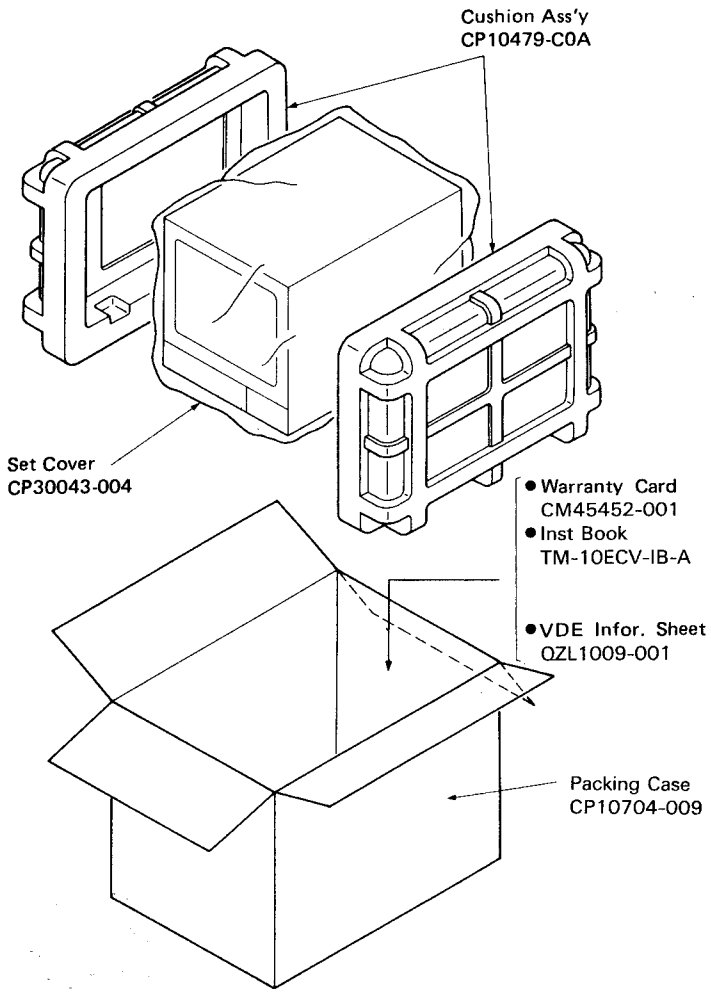
■ MAIN P.C. BOARD ASS'Y(TRC-1217A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R.			
R101	QVAZ001-C008A	V R UNIT	
R1333	QVPC608-102M	V R (DL AMP)	1KΩ B
R1417	QVPC608-103M	V R (V. HEIGHT)	10KΩ B
R1514	QVPC608-103M	V R (H. FREQ)	10KΩ B
RESISTOR			
⚠ R1520	QRV141F-5361Y	MF R	5.36kΩ 1/4W F
⚠ R1521	QRV141F-1872Y	MF R	18.7kΩ 1/4W F
R1529	QRG019J-221S	OM R	220 Ω 1W J
⚠ R1530	QRG019J-471S	OM R	470 Ω 1W J
⚠ R1531	QRG029J-102A	OM R	1kΩ 2W J
R1902	QRX029J-4R7A	MF R	4.7 Ω 2W J
CAPACITOR			
C1211	QETB1CM-477	E CAP.	470μF 16V M
C1212	QEE51VK-106M	TAN. CAP.	10μF 35V K
C1213	QFV71HJ-124MZ	TF CAP.	0.12μF 50V J
C1214	QFV71HJ-124MZ	TF CAP.	0.12μF 50V J
C1215	QETA0JM-107	E CAP.	100μF 6.3V M
C1310	QAT3110-300A	TRIM CAP.	
C1402	QFZ0083-683MZ	M CAP.	0.068μF 50V K
C1404	QEN51HM-474	BP E CAP.	0.47μF 50V M
C1405	QEE61CK-225BZ	TAN. CAP.	2.2μF 16V K
C1408	QFV71HJ-224MZ	TF CAP.	0.22μF 50V J
⚠ C1410	QETB1VM-107	E CAP.	100μF 35V M
C1411	QEE61CK-225BZ	TAN. CAP.	2.2μF 16V K
C1414	QEE51VK-106M	TAN. CAP.	10μF 35V K
C1416	QFV71HJ-274MZ	TF CAP.	0.27μF 50V J
C1417	QEN52AM-474	BP E CAP.	0.47μF 100V M
C1418	QEE51VK-106M	TAN. CAP.	10μF 35V K
C1505	QFP31HJ-152S	PP CAP.	1500pF 50V J
C1516	QFZ0083-104MZ	M CAP.	0.1μF 50V K
C1519	QEM51CM-108M	E CAP.	1000μF 16V M
⚠ C1524	QFZ0081-2501S	MPP CAP.	2500pF 1600V ±3%
⚠ C1528	QFZ0089-224S	MPP CAP.	0.22μF 200V J
C1535	QFV71HJ-224MZ	TF CAP.	0.22μF 50V J
C1701	QETB1HM-107	E CAP.	100μF 50V M
⚠ C1901	QFZ9022-104M	MF CAP.	0.1μFAC250V M
⚠ C1902	QCZ9025-472A	C CAP.	4700pFAC125V Z
⚠ C1903	QCZ9025-472A	C CAP.	4700pFAC125V Z
⚠ C1904	QCZ9025-472A	C CAP.	4700pFAC125V Z
C1905	QEU72DM-477M	E CAP.	470μF 200V M
TRANSFORMER			
T1301	CE40443-001	BP TRANSF	
T1302	CE40395-001	CW TRANSF	
T1303	CE40636-001	DL P TRANSF	
⚠ T1501	CE40361-00B	HOR. DRIVE TRANSF	
COIL			
L1201	A76186-18	PEAKING COIL	18μH
L1304	A76186-47Z	PEAKING COIL	47μH
L1305	A76186-8.2Z	PEAKING COIL	8.2μH
L1401	A76186-1000Z	PEAKING COIL	1000μH
L1501	A76186-2.2Z	PEAKING COIL	2.2μH
⚠ L1502	CE41013-00A	LIN COIL	
⚠ L1503	CE40140-00K	WIDTH COIL	
⚠ L1504	CJ39509-050	CHOKE COIL	
L1505	A49468-101U	PEAKING COIL	100μH
L1507	CJ30030-200	HEATER CHOKE	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D1201	1SS133-T2	SI. DIODE	
D1202	1SS133-T2	SI. DIODE	
D1203	1SS133-T2	SI. DIODE	
D1204	1SS133-T2	SI. DIODE	
D1205	MA27W(B)	SI. DIODE	
D1206	MA4091(H)	ZENER DIODE	
D1207	MA27W(B)	SI. DIODE	
D1401	1SS133-T2	SI. DIODE	
D1402	1SR35-100A-T2	SI. DIODE	
⚠ D1403	V19E	SI. DIODE	
D1501	1SS133-T2	SI. DIODE	
D1502	1SS133-T2	SI. DIODE	
⚠ D1503	HZ7B2L-C1	ZENER DIODE	
⚠ D1504	V19E	SI. DIODE	
D1505	1SS133-T2	SI. DIODE	
D1507	RH1S-LFA1	SI. DIODE	
D1508	1SS133-T2	SI. DIODE	
D1510	V19E	SI. DIODE	
D1551	1SS81	SI. DIODE	
D1552	MA4120(L)-T2	ZENER DIODE	
D1553	1SS81-T2	SI. DIODE	
D1554	SLR-34VC3F	L.E.D	Power Ind.
D1701	V19E	SI. DIODE	
D1901	1S1887A	SI. DIODE	
D1902	1S1887A	SI. DIODE	
D1903	1S1887A	SI. DIODE	
D1904	1S1887A	SI. DIODE	
D1905	1S1887A	SI. DIODE	
TRANSISTOR			
Q1201	2SC1959(OY)	SI. TRANSISTOR	
Q1202	2SD637(QR)	SI. TRANSISTOR	
Q1203	2SD637(QR)	SI. TRANSISTOR	
Q1204	2SB641(QR)	SI. TRANSISTOR	
Q1205	2SC1959(OY)	SI. TRANSISTOR	
Q1501	2SC1627A(OY)	SI. TRANSISTOR	
⚠ Q1502	2SD1554-LB	SI. TRANSISTOR	H. Out
Q1503	2SC1815(YG)	SI. TRANSISTOR	
Q1504	2SA1015(YG)	SI. TRANSISTOR	
Q1551	2SC2482	SI. TRANSISTOR	
IC			
IC1201	TA7698AP	I.C. (M)	
⚠ IC1401	AN5515	I.C. (M)	
⚠ IC1901	STR30115-A	I.C.	
OTHERS			
DL1201	CE40714-001	DELAY LINE	
DL1301	A76350	1H DELAY LINE	
⚠ FR1420	QRH027J-3R3M	F R	3.3 Ω 2W J
⚠ FR1525	QRH027J-2R7M	F R	2.7 Ω 2W J
⚠ FR1532	QRH017J-1R5M	F R	1.5 Ω 1W J
⚠ FR1551	QRH144J-272H	F R	2.7kΩ 1/4W J
⚠ FR1701	QRH127J-4R7M	F R	4.7 Ω 1/2W J
⚠ F1901	QMF51E2-3R15S	FUSE	3.15A
⚠ F1902	QMF51E2-R80S	FUSE	0.80A
⚠ LF1901	CE41094-00B	LINE FILTER	
S01	QSS1C22-C02	SLIDE SWITCH	75Ω SW
S1201	QSP2C22-C01	PUSH SWITCH	Service SW
S1401	QSL4A13-C02	LEVER SWITCH	V Center SW
⚠ S1901	QSP4D21-C06	PUSH SWITCH	Power SW

■ PACKING DIAGRAM



■ MAIN P.C. BOARD ASS'Y (TRC-1217A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
OTHERS			
TH1201	A75575-332	THERMISTOR	
⚠ TH1901	CE40478-001	W POSISTOR	
X1301	A76090	CRYSTAL	

■ CRT SOCKET P.C. BOARD ASS'Y (TRC-3115A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R3703	QVPE802-103H	V R (B CUT OFF)	10KΩ B
R3708	QVPE802-103H	V R (R CUT OFF)	10KΩ B
R3709	QVPE802-201H	V R (R DRIVE)	200 Ω B
R3713	QVPE802-103H	V R (G CUT OFF)	10KΩ B
R3714	QVPE802-201H	V R (G DRIVE)	200 Ω B
RESISTOR			
R3717	QRG019J-822S	OM R	8.2kΩ 1W J
R3719	QRG019J-822S	OM R	8.2kΩ 1W J
R3721	QRG019J-822S	OM R	8.2kΩ 1W J
CAPACITOR			
C3705	QCZ9017-102M	C CAP.	1000pF 3KV R
COIL			
L3701	A76186-150	PEAKING COIL	150μH
L3702	A76186-150	PEAKING COIL	150μH
L3703	A76186-150	PEAKING COIL	150μH
TRANSISTOR			
⚠ Q3701	2SC2611	SI. TRANSISTOR	
⚠ Q3702	2SC2611	SI. TRANSISTOR	
⚠ Q3703	2SC2611	SI. TRANSISTOR	
OTHERS			
⚠	CE40228-00A	CRT SOCKET	

JVC TM-10E(CV) SCHEMATIC DIAGRAM

■ NOTICE

○ The voltage reading and waveform ware measured at each point with a multi-meter and an oscilloscope while receiving a video signal (color bar) through the video input terminal on the monitor.
The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.

Multimeter used
DC 20kΩ/V
Given figures are all DC voltages.
Sweep speed of oscilloscope
H → 20 μS/div.
V → 5 mS/div.
Others → sweep speed specified

○ Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

○ FR (-WW-FR) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors parts indicated with black shading ( ) in the circuit diagrams, be sure to ensure safety by using designated parts.

○ As to other parts too, use designated parts to maintain safety and performance.

■ INDICATING METHOD OF PARTS SYMBOL NUMBERS

○ Inside board (Example) TRC-1217A: R1209 → R209

○ Outside board (Example) R0001 → R01

■ CIRCUIT DIAGRAM INDICATING METHOD

1. Resistor
   ○ Resistance value
   Without unit : [Ω] K : [kΩ] M : [MΩ]
   ○ Rated allowable power
   Without indication : ⅙W & ¼W Others : Indicated
   ○ Type
   Without indication : Carbon resistor
   OMR : Oxide metal film resistor
   UNFR : Unflammable resistor
   CMF, MFR : Coating metal film resistor
   FR : Fusible resistor
   * Composition resistor 1/2 [W] is indicated as 1/2S or Comp.
2. Capacitor
   ○ Capacitance
   Above 1 : [pF] Below 1 : [μF]
   ○ Withstand voltage
   Without indication : DC 50 [V]
   Others : DC withstand voltage [V]
   AC indicated : AC withstand voltage [V]
   ○ Indications for electrolitic capacitors are as follows.
   (example) 47/50 → capacitance [μF) / pressure-tightness [V]
   ○ Type
   Without indication : Ceramic capacitor
   MY : Mylar capacitor
   MM : Metalized mylar capacitor
   PP : Polypropylene capacitor
   MPP : Metalized polypropylene capacitor
   NP : Nonpolar electrolytic capacitor
   BP : Bipolar electrolytic capacitor
   TAN. : Tantalum capacitor
   MF : Metal film capacitor
3. Coil
   Without unit : [μH]
4. Test point & GND symbol
   : Test point by miniature GT pin,
   : Only test point is indicated,
   : NEUTRAL GND, : EARTH GND
5. Connection method
   : Connector , : Receptacle
   : Wrapping or soldering
6. Power Supply (Each voltage reading specified.)
   : B_1 Voltage (115 V) : B_2 Voltage (12 V)
   : 11V

■ BASINGS OF TRANSISTORS & ICs

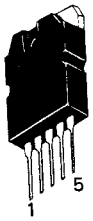
2SC2611

2SC1959(Q,Y)
2SC1627A
2SA1015(Y,GR)

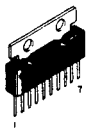
2SD1554

2SB641(Q,R)
2SD637(Q,R,S)

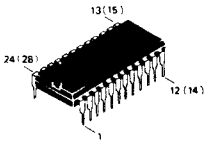
2SC1815(Y,GR)
2SC2482



STR30115-A



AN5515



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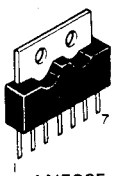

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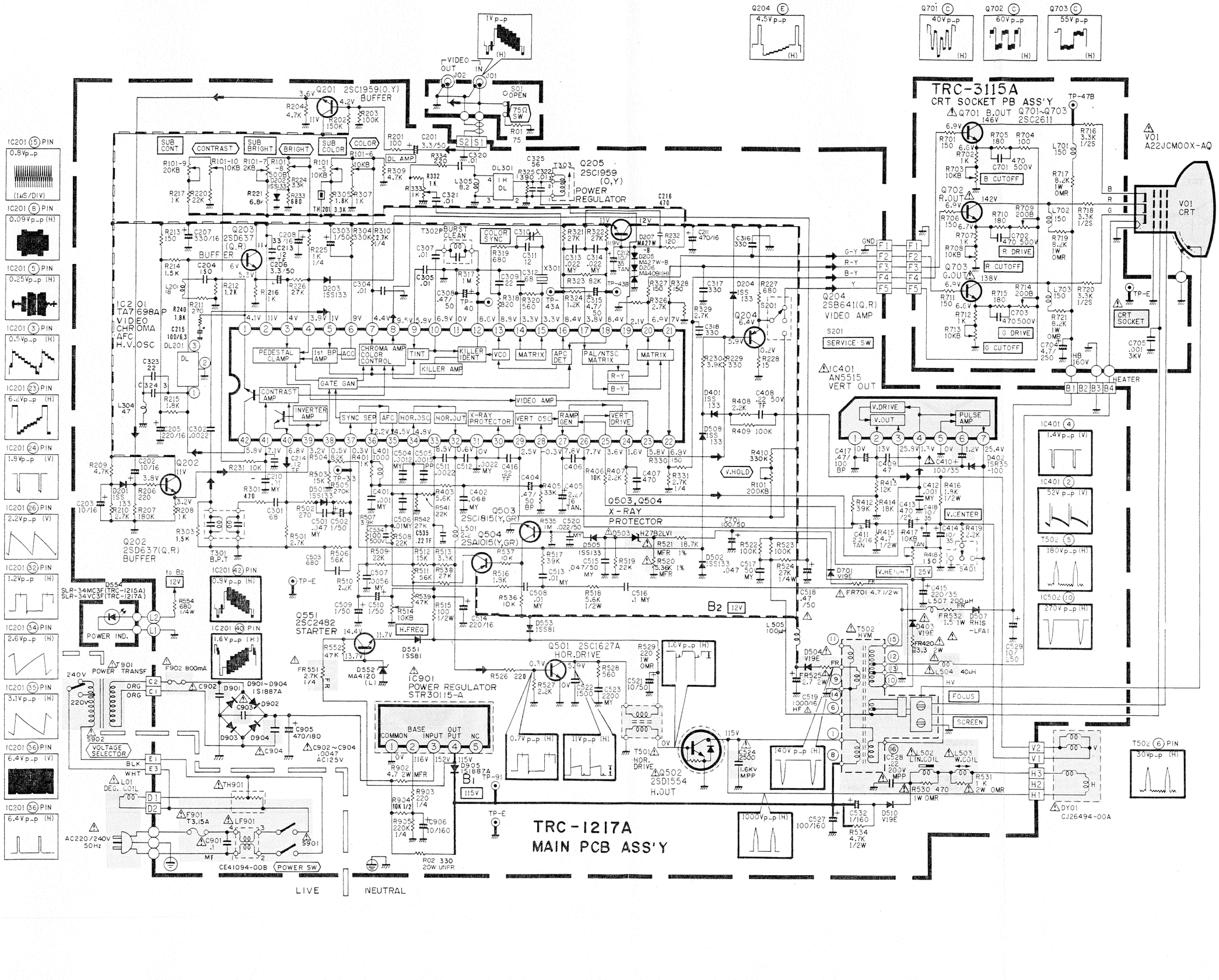
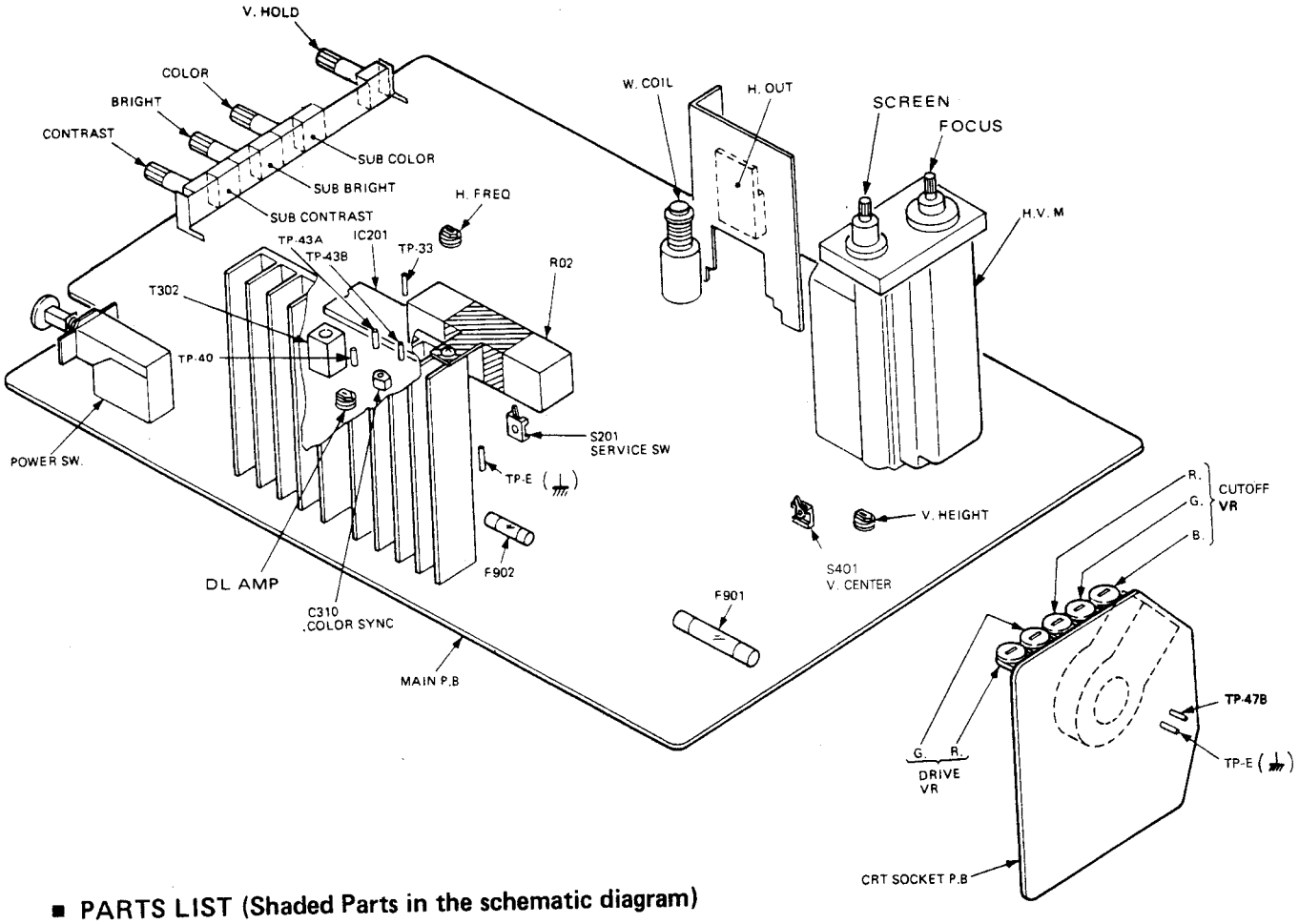
Ⓐ TM-10E(CV)

SCHEMATIC DIAGRAM



ALIGNMENT LOCATION



■ PARTS LIST (Shaded Parts in the schematic diagram)

Symbol No.	Part No.	Part Name
MAIN PC BOARD ASS'Y		
RESISTOR		
R1520	QRV141F-5361Y	MF R
1521	QRV141F-1872Y	"
1530	QRG019J-471S	OM R
1531	QRG029J-102A	"
CAPACITOR		
C1410	QETB1VM-107	E Cap
1524	QFZ0081-2501S	MPP Cap
1528	QFZ0089-224S	"
1901	QFZ9022-104M	MF Cap
1902	QCZ9025-472A	C Cap
1903	QCZ9025-472A	"
1904	QCZ9025-472A	"
COIL		
L1502	CE41013-00A	LIN Coil
1503	CE40140-00K	Width Coil
1504	CJ39509-050	Heater Choke
TRANSFORMER		
T1501	CE40361-00B	Hor Drive Transf
TRANSISTOR		
Q1502	2SD1554	Si Transistor
DIODE		
D1403	V19E	Si Diode
1503	HZ7B2L-C1	Zener Diode
1504	V19E	Si Diode

Symbol No.	Part No.	Part Name
IC		
IC 1401	AN5515	IC
1901	STR30115-A	"
OTHERS		
LF 1901	CE41094-00B	Line Filter
TH 1901	CE40478-001	W Posistor
F 1901	QMF51E2-3R15S	Fuse
1902	QMF51E2-R80S	"
S 1901	QSP4D21-C06	Push Switch (power)
FR 1525	QRH027J-2R7M	F R
1532	QRH017J-1R5M	"
1701	QRH127J-4R7M	"
1420	QRH027J-3R3M	"
1551	QRH144J-272H	"
CRT SOCKET PC BOARD ASS'Y		
Q3701	2SC2611	Si Transistor
3702	2SC2611	"
3703	2SC2611	"
	CE40228-00A	CRT Socket
OUTSIDE OF PCB ASS'Y		
V01	A22JCM00X-AQ	Picture Tube
DY01	CJ26494-00C	Def Yoke Ass'y
T1502	CJ26896-00A	HVT
L01	CJ39634-00J	Deg Coil
	QMP4738-200R	Power Cord
T901	CE30122-001	Power Transf
S902	QSR4A14-C03	Rotary Switch

MAIN PB BACK PATTERN